

Appl. No. 10/749,337
Amdt. Dated January 22, 2008
Reply to Office Action of December 27, 2007

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Amendments to the Claims

This listing of claims will replace all the prior versions and listing of claims in the application:

Listing of Claims:

Claim 1 (previously amended): A separation membrane for a rechargeable battery, comprising:

a plurality of composite layers attached to each other, each of the composite layers comprising a plurality of molecular layers;

wherein each of the molecular layers comprises a plurality of equilateral triangle units, each of the equilateral triangle units comprises three lithium ions and a carbon atom, each of the three lithium ions is respectively at a corresponding one of the three vertexes of the equilateral triangle unit, and a carbon atom is at a center of the equilateral triangle unit.

Claim 2 (original): The separation membrane as described in claim 1, wherein the number of the composite layers is in the range from 5 to 20.

Claim 3 (original): The separation membrane as described in claim 2, wherein the number of the composite layers is 10.

Claim 4 (original): The separation membrane as described in claim 1, wherein a thickness of each of the composite layers is in the range from 500 nanometers to 500 microns.

Claim 5 (original): The separation membrane as described in claim 4, wherein the thickness of each of the composite layers is approximately 100 microns.

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Claim 6 (previously amended): The separation membrane as described in claim 1; wherein a thickness of the separation membrane is approximately 1 millimeter.

Claim 7 (original): The separation membrane as described in claim 1, wherein a length of each side of each of the equilateral triangle units is in the range from 25 nanometers to 100 nanometers.

Claim 8 (original): The separation membrane as described in claim 1, wherein the composite layers are attached to each other with adhesive.

Claims 9-11 (cancelled)

Claim 12 (previously amended): A separation membrane for a rechargeable battery, comprising:

a plurality of composite layers attached to each other, each of the composite layers comprising a plurality of molecular layers;

wherein each of the molecular layers comprises a plurality of equilateral triangle units arranged in an alternative/staggered manner so as to form a hexagonal extension thereof, wherein each of the equilateral triangle units comprises three lithium ions and a means, each of the three lithium ions is respectively at a corresponding one of the three vertexes of the equilateral triangle unit, and the means of the equilateral triangle unit is configured for attracting said three lithium ions towards a center of the equilateral triangle unit.

Claim 13 (previously amended): The separation membrane as described in claim 12, wherein said means is at least one of carbon, silicon, and germanium.

Claim 14 (original): The separation membrane as described in claim 12,

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wherein each of said molecular layers defines silicon carbide, or silicon oxide, or compositions of carbon and silicon carbide, and or compositions of silicon and germanium thereof.

Claim 15 (original): The separation membrane as described in claim 12, wherein a diagonal of each equilateral hexagon of said hexagonal extension, which passes through a center thereof, is in a range of 50 nanometers to 200 nanometers.

Claim 16 (previously amended): The separation membrane as described in claim 12, wherein each of said equilateral triangle units is nanosized.